

WHAT IS CLAIMED IS:

1. In a computing environment, a method comprising:  
receiving a query comprising a plurality of search  
arguments;

5 decomposing the query into component parts corresponding  
to the search arguments;

executing a primitive search of a database for each  
component part to obtain a key list comprising at least one  
key; and

10 executing at least one database operation using data of  
the key list to retrieve results

2. The method of claim 1 further comprising returning  
the results in response to the query.

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3. The method of claim 1 further comprising validating  
the request.

4. The method of claim 1 further comprising, for each  
20 primitive search that is executed, receiving a value  
indicative of a number of keys, and determining whether the  
number of keys indicates that no match was found for a given  
search argument.

5. The method of claim 1 further comprising filtering results of the primitive search based on information received with the query such that the key list contains a filtered subset of returned keys.

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6. The method of claim 1 further comprising committing the search.

7. The method of claim 6 wherein committing the search  
10 includes sorting the key list based on information received with the query.

8. The method of claim 1 wherein executing a primitive search of a database for each search argument to obtain a key  
15 list comprises, maintaining a staging area including a key set of at least one key returned from a primitive search, and combining the key set with another key returned from another primitive search.

20 9. The method of claim 8 wherein the other primitive search corresponds to a different search argument, and wherein combining the key set comprises performing an AND-ing of keys.

10. The method of claim 8 wherein the other primitive search corresponds to a common search argument, and wherein combining the key set comprises performing an OR-ing of keys.

5        11. The method of claim 1 further comprising, determining which of the search arguments is likely to be most selective with respect to receiving keys, and further comprising ordering the search argument data such that the search argument that was determined as most likely selective  
10 is used first in executing the primitive search of the database.

12. The method of claim 1 further comprising associating a context identifier with the search request.

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13. The method of claim 1 wherein the query is received in an XML message, and wherein returning the results comprises formatting an XML response message.

20        14. The method of claim 1 wherein the query is received in an UDDI find request.

15. A computer-readable medium having computer-executable instructions for performing the method of claim 1.

16. In a computing environment having a client and a database, a system comprising:

5 a middle tier service that receives a request from the client;

a database server that provides access to the database via a search logic component and a get logic component associated with the database server;

10 a query processor in the middle tier component that decomposes a query in the request into separate search arguments, and executes at least one search of the database by communicating with the search logic in the database server, the search logic returning a key list to the middle tier service in response to the search;

15 a results retrieval mechanism in the middle tier component that obtains query results by communicating data in the key list to the get logic in the database server, the middle tier service returning the query results to the client in response to the request.

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17. The system of claim 16 wherein the search logic component includes a set manager, the set manager maintaining a staging area for the result of each search, including AND-ing each key returned in a search of the database

corresponding to one search argument with any key in the staging area previously returned in a search of the database corresponding to another search argument.

5           18. The system of claim 16 wherein the request comprises an XML message.

19. The system of claim 16 wherein the request comprises a UDDI find request.

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20. The system of claim 16 further comprising a commit mechanism of the middle tier service and a commit search logic component of the database server, the commit search logic sorting the key list when requested by the commit mechanism.

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21. The system of claim 16 further comprising a validation mechanism that validates the request from the client.

20           22. The system of claim 16 wherein the client comprises a remote network client, and further comprising a mechanism in the middle tier service that deserializes the request and serializes the response for network transmission.

23. The system of claim 16 wherein the query processor and executes each search in an order that attempts to search the database with a most-selective-first ordering of the search arguments.

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24. In a computing environment, a method comprising:

a) receiving a client query comprising a plurality of search arguments;

b) decomposing the query into component parts

10 corresponding to the search arguments;

c) ordering the component parts and selecting a first component part as a selected component part based on the ordering;

15 d) executing a primitive search of a database for the selected component part;

e) combining the result of the search with any previous search results in a combined result key list;

f) determining whether the combined result key list includes at least one key,

20 1) and if not, terminating the process and returning a response indicative of no match found;

2) and if so, determining whether a next component part remains to be searched, and if so, selecting that

next component part as the selected component part and  
returning to d), and if not, continuing to g)  
g) using data of the key list to retrieve results from  
the database; and  
5 h) returning a response including the results to the  
client query.

25. The method of claim 24 wherein the result of at  
least one search for a selected component part comprises the  
10 results of a plurality of searches OR-ed together.

26. The method of claim 24 wherein combining the result  
of the search comprises AND-ing the result with any previous  
search results in a combined result key list;  
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27. The method of claim 24 further comprising validating  
the client query.

28. The method of claim 24 further comprising filtering  
20 the result of at least one search.

29. The method of claim 24 further comprising sorting  
the data of the key list.

30. A computer-readable medium having computer-executable instructions for performing the method of claim 24.

31. In a computing environment, a system comprising:

5 means for receiving a request comprising search arguments;

means for searching a database with primitives corresponding to the search arguments;

10 means for combining keys received from the database search into a key list; and

means for retrieving results from the database via data in the key list.

32. The system of claim 31 wherein the means for  
15 receiving a request comprises request handling means in a UDDI environment.

33. The system of claim 31 further comprising means for returning the results in response to the request.

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